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Research Aid

Prices of Machinery and Equipment in the Peoples Republic of China

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Prices of Machinery and Equipment in the Peoples Republic of China

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PRICES OF MACHINERY AND EQUIPMENT IN THE PEOPLES REPUBLIC OF CHINA

This handbook of machinery and equipment prices in the Peoples Republic of China was prepared as a research aid for use in analyzing Chinese industrial progress. It consists of two sections: a table of machinery and equipment prices for 1952, 1957, 1965, and 1972 and an Appendix that presents the source information.

All prices are in current yuan and are as expressed in the years indicated, with the exception of prices before 1955. The latter prices have been adjusted for the 10,000-to-1 currency conversion effected in March 1955. With a few exceptions, the prices are ex-factory prices (ch'u-ch'ang chia-ko), that is, the transfer prices used by an equipment manufacturing plant in selling its products to other industrial plants or to wholesale enterprises. Where enough data were available, a national average price was constructed on the basis of an unweighted arithmetic mean. In most cases, however, the price is the mean of only a few quotations. Products listed in the Appendix but not in the table are items for which the price data are too fragmentary to permit the estimation of a time series.

The prices listed in the table are believed to be representative of Chinese machinery prices for the years indicated. For the most part, they are prices for items in serial production during long periods when a learning curve has raised the productivity of labor and capital. Thus, it is not surprising that the table shows—what the Chinese have noted at various times in their press—a general price decline since 1952. Some items, however, show an increase in price over time, which may reflect increases in quality or difficulties arising from a small sample of prices. For example, the increase between 1965 and 1972 in the price of boilers is probably explained by increases in quality. The price increase of tube-type radios between 1965 and 1972 cannot be explained satisfactorily.

Prices of Chinese Machinery and Equipment for Selected Benchmark Years

Category	Code ¹	Item	Measure	Price in Current Yuan			
				1952	1957	1965	1972
Power equipment.....	215-21842						
Steam boilers.....	2151-2155	Average boiler	Metric tons per hour	15,060	13,700	11,800	13,560
Steam turbines.....	2159-21615	Average turbine	Kilowatts	95.04	91.67	76.09	68.10
Hydro turbines.....	2162-21624	Average turbine	Kilowatts	120.68	53.62	80.00	31.58
Internal combustion engines.....	2165-2172	100-200 horsepower	Horsepower	150.00	147.98	140.07	143.98
Electric generators.....	2175-217723	Average AC generator	Kilowatts	92.02	57.14	40.00	67.90
Electric motors.....	2181-21842	4 50-kw motor	Kilowatts	144.75	96.21	76.00	53.20
Electric equipment.....	220-22475						
Transformers.....	2201-22033	3-phase oil cooled	Kilovolt amperes	46.34	25.99	18.65	11.30
Metal cutting machine tools....	225-23083						
Lathes.....	2251-2259	C-620 lathe	Units	12,300	10,200	9,200	6,000
Planers.....	2271-2273	See the Appendix					
Forging and pressing equipment.....	231-2348						
Punch presses.....	2342	See the Appendix					
Weaving, knitting, sewing, and printing and dyeing industries equipment.....	304-3225						
Cotton textile machinery....	305-30819						
Looms.....	30711	Type 51 loom	Units	1,550	1,407		
Spindles.....	30811-30812	Average spindle	Units	12.12	11.00	13.00	15.00
Sewing machines.....	32027-32032						
Ex-factory prices.....		Average sewing machine	Units	190.00	108.50		
Retail prices.....		Average sewing machine	Units ²			140.00	152.00
Agricultural machinery.....	395-3984						
Tilling tools.....	3951-39552	Double wheel, double blade plow	Units	90.00	61.50	44.00	27.30
Sowing machinery.....	3957-3961	10-row seeder	Units				726.00
Harvesting machinery.....	3971-3975	See the Appendix					
Irrigation water-lifting machinery.....	3979-39792	Motor and pump set	Horsepower		211.83		
Tractors.....	399-39983						
15-horsepower units and actual units.....	3991	Standard tractor	15-HIP units		10,371	8,681	10,720
Railroad rolling stock and equipment.....	401-40421						
Steam locomotives.....	4011-40123						
MK-1 locomotives.....		MK-1	Units	200,000	220,000		
Peace locomotives.....		Peace model	Units		283,800	244,352	
Diesel locomotives.....	4015	General diesel	2,000-HIP units		756,800	656,900	577,440
Freight cars.....	4021-40226	U-50 gondola car	Units	21,361	19,389		
Merchant vessels.....	419-4273						
Self-powered boats.....	4190	Passenger steamship	Deadweight tons	5,449	4,946		
			Light-ship displacement	3,336	3,028		
Motor vehicles and parts.....	430-44155						
Motor vehicles.....	4301-4305	4-ton Liberation truck	Units		18,000	17,000	13,844
Telecommunication equipment and parts.....	446-44814						
Radio receivers.....	4471						
Vacuum tube radios.....		5-tube radio	Units ²	75.00	69.38	50.00	57.90
Transistor radios.....		General receiver	Units ²		106.70	106.70	92.71
Cultural and consumer products.....	5331-5502						
Bicycles.....	5331	Average bicycle	Units ²	147.16	160.00	160.00	160.00
Wristwatches.....	5347	Average watch	Units ²		112.00	120.00	120.00

¹ State Statistical Bureau, *Kung-yeh ch'an-pin Ku-lu (Index of Industrial Commodities)*, Peking, 1953, pp. 41-85.² Retail price.

APPENDIX

This Appendix provides reference data for the table of Chinese prices of machinery and equipment. The prices were obtained primarily from information in Chinese news media and professional journals. For 1965 and 1972, some price data have been gleaned from reports of journalists, tourists, and other visitors to the PRC and from interviews with emigrants. An effort has been made to include only those prices derived from first-hand knowledge or from official statements by the Chinese to the reporting individual.

All prices, with the exception of those for sewing machines in 1965 and 1972, radios, bicycles, and wristwatches, are ex-factory prices. Retail prices have been reported for these items as the only prices available.

If the price for only one year of 1952 and 1957 was known, a wholesale price index of $1952 = 100.0$ and $1957 = 90.77$ was used to calculate the unknown price. This deflator was drawn from the Shanghai Wholesale Price Index for industrial goods.¹ No similar index is available for 1965 or 1972.

A national consumer goods price index² of $1952 = 100.0$ and $1957 = 92.5$ was also calculated and applied where a 1952 or 1957 retail price was unknown and desired.

In the remaining discussion the following abbreviations for periodicals are used:

¹ Academia Sinica, Shanghai Economic Research Institute, and Shanghai Academy of Social Science, Economic Research Institute, *Shanghai chieh-fang chien-hou wu-chieh tzu-liao hui-pien 1921-1957 (A Compilation of Reference Materials of Shanghai Commodity Prices Before and After Liberation)*, Shanghai Jen-min Ch'u-pan-she, Shanghai, Oct 1958, pp. 456-459.

² State Statistical Bureau, *Ten Great Years*, Foreign Languages Press, Peking, 1960, p. 87. The output value of consumer products from industry is given for 1957 in 1952 yuan and 1957 yuan.

CCYC..... *Ching-chi yen-chiu (Economic Research)*, Peking.
 CHCC..... *Chi-hua ching-chi (Planned Economy)*, Peking.
 CHKY..... *Chi-hsieh kung-yeh (Machinery Industry)*, Peking.
 CHKYCP.... *Chi-hsieh kung-yeh chou-pao (Machinery Industry Weekly)*,
 Shanghai.
 ECMM..... *Extracts from Chinese Mainland Magazines*, Hong Kong, US
 Consulate General.
 FBIS..... *Foreign Broadcast Information Service*, Washington, D.C.
 JMJP..... *Jen-min jih-pao (People's Daily)*, Peking.
 JMTY..... *Jen-min tien yeh (People's Power Industry)*, Peking.
 JPRS..... *Joint Publications Research Service*, Washington, D.C.
 KYCT..... *Kung-yeh chi-tsai (Industrial Materials)*, Peking.
 SCMP..... *Survey of China Mainland Press*, Hong Kong, US Consulate
 General.
 SLFT..... *Shui-li fa-tien (Hydroelectricity)*, Peking.
 TCKT..... *Tung-chi kung-tso (Statistical Work)*, Peking.
 TKP..... *Ta kung pao (Impartial Daily)*, Hong Kong and Peking.

Power Equipment

Steam Boilers

Only boilers used for commercial-scale power generation are included. China also produces many industrial boilers. The increase in price per metric ton per hour of steam output is not unusual. As boilers become larger and provide more output at higher pressures and temperatures, they become more expensive to produce. Large boilers were not produced in China in 1952.

Size	Year	Price (Yuan)	Yuan/Ton/ Hour
20-ton/hour.....	1957	....	13,700 ¹
35-ton/hour (Shanghai plant).....	1959	435,386 ²	12,440
35-ton/hour (Harbin plant).....	1959	372,254 ²	10,636
6.5-ton/hour (194°).....	1962	75,000	11,538
6.5-ton/hour (375°).....	1962	90,000	13,846
4-ton/hour K-4 type.....	1965	40,000	10,000
75-ton/hour (drives 12.5-MW steam turbine).....	1973	1,200,000 ³	16,000
120-ton/hour (drives 25-MW steam turbine).....	1973	1,800,000 ³	15,000
230-240-ton/hour (drives 52-MW steam turbine).....	1973	3,000,000 ³	12,766
410-ton/hour (drives 100-125-MW steam turbine).....	1973	5,500,000 ³	13,415
670-ton/hour (drives 200-MW steam turbine).....	1973	9,500,000 ³	14,179
4-ton/hour K-4-type.....	1973	40,000 ³	10,000

¹ JMTY, No. 32, 1957, p. 29. Taken as one-half of a complete boiler room given as 27,400 yuan per ton/hour.

² CHKYCP, 11 May 1959, p. 5. Assumes that the markup in 1959 was 44.7%, the same as turbines. The 1973 markup is the same on boilers, turbines, and generators.

³ Costs and prices given by this source indicate a 35% markup.

The price series for boilers is derived from the data above, as follows:

	Price (Current Yuan/Ton/ Hour)	Comment
1952.....	15,090	The 1957 price inflated by the Shanghai Wholesale Price Index.
1957.....	13,700	
1965.....	11,800	The mean of the three 1962-65 unit prices.
1972.....	13,560	The mean of the six 1973 unit prices.

Steam Turbines

This category includes only steam turbines used to power large-scale electric generators.

Size	Year	Price (Yuan)	Yuan/KW
3,000-KW.....	1951	302,526 ¹	100.84
6,000-KW.....	1951	535,440 ¹	89.24
6,000-KW.....	1957	550,000 ²	91.67
1,500-KW.....	1959	123,120 ³	82.08
12,500-KW.....	1973	1,300,000 ⁴	104.00
25,000-KW.....	1973	1,900,000 ⁴	76.00
50,000-KW.....	1973	3,600,000 ⁴	60.00
100,000-KW.....	1973	5,300,000 ⁴	53.00
200,000-KW.....	1973	9,500,000 ⁴	47.50

¹ Management Division of the Ministry of Fuel Industry of the Central People's Government, *Chu-yao she-pei chi ts'ci-liao ku-chia piao-chun mu-lu* (Catalogue of Standard Prices of Important Equipment and Materials), Hsin-hua Shu-tien, Peking, Nov 1951.

² CCYC, No. 4, 1958, p. 11. A markup of 44.7% is calculated from the cost of 380,000 yuan reported in CCYC, No. 3, 1957, p. 66.

³ CHKYCP, 11 May 1959, p. 5. The costs at four different plants making the 1,500-KW steam turbine have been averaged and then marked up by 44.7%.

⁴ Manufactured at Harbin. The costs and prices given by this source indicate an average markup of about 35%.

The price series for steam turbines is derived from the data above, as follows:

	Price (Current Yuan/ KW)	Comment
1952.....	95.04	The mean of the two 1951 unit prices.
1957.....	91.67	
1965.....	76.09	Interpolated between the 1959 and 1973 unit prices.
1972.....	68.10	The mean of the five 1973 unit prices.

Hydroturbines

Turbines for hydroelectric power generation vary considerably in price per kilowatt. Such design requirements as water head, blade diameter, and rotational speed are more important cost considerations than absolute kilowatt rating. For this reason, low water head units are included in this listing for reference but are not used in the calculations. It is assumed that large-capacity units do not differ significantly in price per kilowatt from the small units.

Size	Year	Price (Yuan)	Yuan/KW
1,050-KW	1950	30,000 ¹	28.57
37-KW	1951	6,000 ¹	162.16
74-KW	1951	18,000 ¹	243.24
186-KW	1951	18,000 ¹	96.77
410-KW	1952	50,000 ¹	121.95
74-KW	1952	8,000 ¹	108.11
334-KW low water head	1952	57,000 ¹	170.66
100-KW low water head	1952	18,000 ¹	180.00
130-KW	1952	15,000 ¹	115.38
448-KW	1952	40,000 ¹	89.29
170-KW low water head	1955	70,000 ²	411.76
25-IIP (18.65-KW)	1957	1,000 ³	53.62
134-KW low water head	1957	25,000 ⁴	186.57
8-KW	1958	860 ⁵	107.50
125-KW Type S6-7	1965	10,000	80.00
25-IIP (18.65-KW)	1972	500	26.81
30-IIP (22.38-KW)	1972	800	35.75
50-IIP (37.30-KW)	1972	1,200	32.17

¹ *SLFT*, No. 12, 1958, p. 28.

² *Ibid.* This is not a typical unit because of the low water head.

³ *600 Million Build Industry*, Foreign Languages Press, Peking, 1958, p. 147.

⁴ *SLFT*, No. 12, 1958, p. 28. This is not a typical unit because of the low water head.

⁵ *Ibid.*, pp. 15-17, and *SLFT*, No. 14, 1958, p. 44.

The price series for hydroturbines is derived from the data above, as follows:

	Price (Current Yuan/KW)	Comment
1952	120.68	The mean of the eight 1950-52 unit prices.
1957	53.62	
1965	80.00	
1972	31.58	The mean of the three 1972 unit prices.

Internal Combustion Engines

Internal combustion engines consist of diesel, gasoline, coal-gas, and donkey engines. The list below consists of prices for diesel engines, which make up the majority of internal combustion engines produced in China. Engines of less than 15 HP are listed below for references but are not used in the calculation of the price series. Cost figures were marked up by 50%.¹

Size	Year	Price (Yuan)	Yuan/HP
100-HP and under.....	1951	....	180.00 ²
100-200-HP.....	1951	....	150.00 ²
200-500-HP.....	1951	....	120.00 ²
500-HP and over.....	1951	....	90.00 ²
40-HP.....	1958	5,978 ³	149.45
40-HP.....	1958	5,338 ³	133.45
32-HP.....	1958	7,710 ³	240.94
32-HP.....	1958	5,966 ³	186.44
8-HP.....	1958	1,563 ³	195.38
8-HP.....	1958	1,839 ³	229.88
12-HP.....	1958	6,510 ³	542.50
10-HP.....	1962	2,491	249.10
20-HP.....	1962	3,677	183.85
40-HP.....	1962	8,000	200.00
7.5-HP Donkey engine.....	1962	2,000	266.67
20-HP.....	1962	3,000	150.00
30-HP.....	1962	6,000	200.00
20-HP Type 2105.....	1963	2,802	140.10
1,000-HP Model B2-1000.....	1964	72,654	72.65
25-HP.....	1964	2,500 ⁴	100.00
28-HP.....	1965	6,313	225.46
120-HP.....	1969	15,000	125.00
135-HP.....	1969	22,000	162.96

¹ Chu-yuan Cheng, *The Machine Building Industry in Communist China*, New York, Aldine Press, 1971, p. 268.

² Management Division of the Ministry of Fuel Industry of the Central People's Government, *op. cit.*

³ CHCC, No. 9, 1958, p. 39.

⁴ May be a used engine.

To prevent distortion by price differences due solely to the size of the engines, the average price of the 100-200-HP engines is used as a standard. All prices for small engines are converted to that range using the ratio of the prices given for 1951.

The price series for internal combustion engines is derived from the data above, as follows:

	Price (Current Yuan/HP)	Comment
1952.....	150.00	The 1951 price for the 100-200-HP range.
1957.....	147.98	The mean of the four 1958 adjusted unit prices.
1965.....	140.07	The mean of the eight 1962-65 adjusted unit prices.
1972.....	143.98	The mean of the two 1969 unit prices.

Electric Generators

Generators produced in the PRC have steadily increased in size over the years. No large-scale generators were produced prior to 1956. When China began to build units of 100,000 KW and up in the 1960s, many were made with a water-cooled rotor. Water cooling is more expensive than standard hydrogen cooling and may explain the rise in price between 1965 and 1973. The hydroelectric generators listed are about twice as expensive as the thermal generators.

Size	Year	Price (Yuan)	Yuan/KW
160-KW hydroelectric.....	1955	60,000 ¹	375.00
6,000-KW thermal electric.....	1956	342,840 ²	57.14
130-KW hydroelectric asynchronous.	1957-58	15,700 ¹	120.77
6,000-KW thermal electric.....	1965	240,000	40.00
12,500-KW thermal electric.....	1973	1,300,000	104.00
25,000-KW thermal electric.....	1973	1,900,000	76.00
50,000-KW thermal electric.....	1973	3,000,000	60.00
100,000-KW thermal electric.....	1973	5,200,000 ³	52.00
200,000-KW thermal electric.....	1973	9,500,000	47.50

¹ *SLFT*, No. 12, 1956, p. 20.

² *ECMM*, No. 67, 28 Jan 1957, p. 18.

³ This unit, reported as 100,000 KW, may actually have been a 125,000-KW unit.

An electrical equipment price index was constructed using the prices of transformers and electric motors for 1952 and 1957 with an average of the output for these two categories. The following data were used:

	Price 1952	Price 1957	Output 1952	Output 1957
	Yuan/KVA		Thousand KVA	
Transformers.....	46.34	25.99	1,167 ¹	3,590 ²
	Yuan/KW		Thousand KW	
Motors.....	144.75	96.21	639 ³	1,455 ³

¹ State Statistical Bureau, *Wo-kuo kang-t'ieh, tien-li, mei-t'an, chi-hsieh, fung-chih, tsao-chih kung-yeh ti chin-hsi* (Past and Present of China's Iron and Steel, Electric Power, Coal, Machine Building, Textile, and Paper Industries) Tung-chi ch'u-pan-she, Peking, 1958, p. 114.

² *CHKY*, No. 3, 1958, p. 3, in thousand KVA.

³ *Ten Great Years*, op. cit., p. 97. Output in thousand KW.

The index is of the form:

$$I_{57} = \frac{\sum P_{i57}(Q_{i52} + Q_{i57})}{\sum P_{i52}(Q_{i52} + Q_{i57})} \times 100.$$

The 1957 price index of 62.1 is used to determine the 1952 price for electric generators.

The price series for thermal electric generators is derived from the data above, as follows:

	Price (Current Yuan/KW)	Comment
1952.....	92.02	The 1957 price deflated by the Electrical Equipment Price Index.
1957.....	57.14	The 1956 unit price.
1965.....	40.00	
1972.....	67.90	The mean of the five 1973 unit prices.

Electric Motors

Only AC multipole three-phase motors have been priced. Fractional horsepower motors, single-phase motors, DC motors, and split-phase motors are not included because of their inherent cost differences. It is assumed that the average motor is between 4 KW and 50 KW in size.

Size	Year	Price (Yuan)	Yuan/KW
100-HP (74.6-KW).....	1952	12,418.80 ¹	166.47
100-HP (74.6-KW).....	1952	10,000.00 ¹	134.05
50-HP (37.3-KW).....	1952	3,538.00 ¹	94.85
20-HP (14.9-KW).....	1952	1,494.50 ¹	100.30
5-HP (3.7-KW).....	1952	610.00 ¹	164.86
3-HP (2.2-KW).....	1952	457.50 ¹	207.95
30-KW.....	1958	6,835.00 ²	227.83
30-KW.....	1958	8,506.00 ²	283.53
2.8-KW, 4-pole.....	1958	255.00 ²	91.07
2.8-KW, 4-pole.....	1958	210.00 ²	75.00
115-KW.....	1959	2,976.00 ³	25.88
115-KW.....	1959	3,594.00 ³	31.25
100-KW.....	1959	2,969.00 ³	29.69
100-KW.....	1959	2,426.00 ³	24.26
4.5-KW.....	1959	430.00 ³	95.56
4.5-KW.....	1959	456.00 ³	101.33
4.5 KW.....	1959	328.00 ³	72.89
7-KW.....	1965	595.00	85.00
10-KW (J40P).....	1965	670.00	67.00
1.5-KW.....	1972	100.00	66.67
2.8-KW.....	1972	150.00	53.57
5-KW.....	1972	390.00	60.00
7-KW.....	1972	380.00	54.29
10-KW.....	1972	500.00	50.00
14-KW.....	1972	600.00	42.86
20-KW.....	1972	900.00	45.00

¹ KYCT, No. 1, 1952.

² CHKY, No. 8, 1958, pp. 5-6. The costs of the 30-KW units appear excessive; they may be cost data from inefficient plants. The cost data given were marked up by 50%. The markup is derived from cost and price data on transformers in the section below.

³ CHKYCP, 11 May 1959. The cost data given were marked up by 50%. The markup is derived from cost and price data on transformers in the section below.

The price series for electric motors is derived from the data above, as follows:

	Price (Current Yuan/KW)	Comment
1952.....	144.75	The mean of the six 1952 unit prices.
1957.....	96.21	The mean of the 11 1958-59 unit prices.
1965.....	76.00	The mean of the two 1965 unit prices.
1972.....	53.20	The mean of the seven 1972 unit prices.

Electric Equipment

Transformers

Only oil-cooled power transformers are included. Communications and appliance-type transformers are excluded from this category.

Size	Year	Price (Yuan)	Yuan/KVA
The mean of nine unit prices (50-2,000 KVA).....	1952	....	46.34 ¹
The mean of three unit prices for a 180-KVA unit.....	1958	4,678	26.00 ²
The mean of 16 unit prices (100-750-KVA).....	1959	....	26.39 ³
The mean of three unit prices for a 1,000-KVA unit.....	1959	17,944	17.94 ³
The mean of 18 unit prices (50-180-KVA).....	1959	....	26.97 ⁴
The mean of 25 unit prices (25-5,600-KVA).....	1972	....	11.30

¹ KYCT, No. 1, 1952, pp. 26-29.

² CHKY, No. 8, 1958, pp. 5-6. The cost data were marked up by 50%. The markup was derived from the average of the costs given in source No. 3 and the average of the prices given in source No. 4.

³ CHKYCP, 11 May 1959. The cost data were marked up by 50%. The markup was derived from the average of the costs given in source No. 3 and the average of the prices given in source No. 4.

⁴ JPRS, No. 10,893, 7 Nov 1961. A translation of *T'ieh-lu piao-chun she chi yu-suan shou-ts'e* (Standard Railway Design and Budget Handbook), People's Railroad Publishing Co., Peking, 1960.

The price series for transformers is derived from the data above, as follows:

	Price (Current Yuan/KVA)	Comment
1952.....	46.34	
1957.....	25.99	The mean of the 40 unit prices for 1958-59.
1965.....	18.65	Interpolated between the 1958 unit price and the 1972 unit price.
1972.....	11.30	

Metalcutting Machine Tools*Lathes*

The most common Chinese metalcutting machine tool is the lathe. Of all the lathes produced in China, the C-620 (a copy of the Soviet 1A62) is the most typical. The price of the C-620 lathe is used as representative of the price of all metalcutting machine tools produced in China. Prices for other lathes and machine tools are also given where available.

	Year	Yuan/Unit
Average lathe.....	1953	12,300 ¹
Average lathe.....	1956	6,800 ²
Average machine tool.....	1957	1,200 1,600 ³ per ton
1A62 lathe.....	1957	10,200 ⁴
C-620-1, C-620 lathe.....	1958	9,761 ⁵
C-630 lathe.....	1958	21,070 ⁶
C-616 lathe.....	1959	8,076 ⁶
C-630 lathe.....	1959	17,000 ⁷
C-620 lathe.....	1959	10,000 ⁷
C-620 lathe.....	1964	9,200
C-616 lathe.....	1964	7,700
C-620 lathe.....	1967	7,500
C-620 lathe.....	1974	6,000

¹ Ma Yin-ch'u, (*Wo te ching-chi li-tun chi-hsueh-ssu-hsiang ho cheng-chih li ch'ang*), Feking, 1958, p. 27.

² *Ibid.*, pp. 27-28.

³ CHCC, No. 9, 1957, in *ECMM*, No. 112, 23 Dec 1957, p. 27. The C-620 lathe, which weighs 2.5 tons, would be priced at 3,000 to 4,000 yuan, if its price per ton were the same as the average machine tool.

⁴ CHKY, No. 3, 1957, p. 10.

⁵ CHKY, No. 6, 1957, p. 9. The cost data were marked up by 100%. The markup was derived from the average of the costs in sources No. 5 and No. 6 and the average of the prices given in source No. 7.

⁶ CHKYCP, 11 May 1959, p. 5. The cost data were marked up by 100%. The markup was derived from the average of the costs in sources No. 5 and No. 6 and the average of the prices given in source No. 7.

⁷ Prices were given for the C-620 lathe and the C-630 lathe.

The price series for machine tools is derived from the data above, as follows:

	Price (Current Yuan/Unit)	Comment
1952.....	12,300	The 1953 price of the average lathe.
1957.....	10,200	The price of the 1A62 lathe.
1965.....	9,200	The 1964 price of the C-620 lathe.
1972.....	6,000	The 1974 price of the C-620 lathe.

Planers

The prices of several types of planers are noted below. As with lathes, these prices suggest that, as the skills necessary to produce them have been learned by Chinese industry, the price of standardized machine tools has dropped.

	Weight (KG)	Year	Price (Yuan)	Yuan/MT
Universal milling machine . . .	...	1951	14,800	...
Universal milling machine . . .	...	1970	11,160	...
Planers/shaping machines:				
B-665	1,850	1964	3,000	3,243
B-635	1,000	1969	3,600	3,000
B-660	1,850	1969	5,000	2,703
B-665	1,850	1969	5,200	2,811
B-6025	450	1969	2,800	6,222
B-2012	25,000	1973	60,000	2,400

Forging and Pressing Equipment*Punch Presses*

The great difference in size between the two units precludes drawing any conclusions about the trend in prices of punch presses.

Size	Weight (MT)	Year	Price (Yuan)	Yuan/MT
40-ton (probably J23-40)	3.54	1960	13,000	3,672
315-ton (JA31-315T)	38.47	1973	50,000	1,300

Weaving, Knitting, Sewing, and Printing and Dyeing Industries Equipment*Cotton Textile Machinery***Cotton Looms**

	Year	Yuan/Unit
Type 51 loom	1952	1,550 ¹

¹ KYCT, No. 1, 1952, p. 34. A copy of the Japanese Toyoda Manufacturing Company's "Bountiful Harvest" brand loom.

The price series for looms is derived from the data above, as follows:

Price (Current Yuan/Unit)	Comment
1952 1,550	
1957 1,407	The 1952 unit price deflated by the Shanghai Wholesale Price Index.

Spindles

	Year	Yuan/Spindle
Model 1252.....	1957	11.00 ¹
Model A512 spinning machine.....	1973	15.00 ²

¹ The value of 600 spinning machines of model 1252 was given as 1.9 million yuan. On the assumption that the spindles account for one-half of the value, the unit price is 11.00 yuan per spindle. See also *FBIS*, 27 Sep 1957, pp. ccc2 ccc3, where 6.4 million yuan is allocated for textile plant improvements, including 130,000 spindles, cleaning machines, combers, drawing and slubbing machines, and the spinning machines which contain the spindles. If the spindles cost 11.00 yuan each, they would represent 22% of the total value of the improvements. This share appears reasonable.

² The A512 spinning machine is priced at 12,000 yuan. Using the same method as in note No. 1, above a unit price of 15.00 yuan is derived.

The price series for spindles is derived from the data above, as follows:

	Price (Current Yuan/Spindle)	Comment
1952.....	12.12	The 1957 unit price inflated by the Shanghai Wholesale Price Index.
1957.....	11.00	
1965.....	13.90	Interpolated between the 1957 and 1973 unit prices.
1972.....	15.00	The 1973 unit price.

Sewing Machines

Ex-Factory Prices

	Year	Yuan/Unit
General sewing machine.....	1952	190.00 ¹
General sewing machine.....	1957	108.60 ¹

¹ *TCKT*, No. 4, 1957, p. 6. This source gives the total production value of unit output in constant 1952 prices and in current (1957) prices.

The ex-factory price series for sewing machines is derived from the data above, as follows:

	Price (Current Yuan/Unit)
1952.....	190.00
1957.....	108.60

Retail Prices

	Year	Yuan/Unit
General sewing machine.....	1965	140.00
Average of nine unit prices, nationwide.....	1972	152.78
General sewing machine, Peking area.....	1972	137.00
General sewing machine, Peking area.....	1974	167.00

The retail price series for sewing machines is derived from the data above, as follows:

	Price (Current Yuan/Unit)	Comment
1965.....	140.00	
1972.....	152.00	The mean of the 1972 and the 1974 unit prices.

Agricultural Machinery

Tilling Tools

The common double-wheel double-blade (DWDB) plow is taken as the standard for this category.

	Year	Yuan/Unit
Type 51 plow production value	1952	25.00 ¹
Type 51 plow production value.....	1957	15.87 ¹
DWDB plow model L-2-20.....	1953	90.00 ²
	1955	105.00 ²
	1956	61.50 ²
DWDB plow.....	1974	27.30

¹ TCKT, No. 4, 1957, p. 6.

² CHKY, No. 21, 1957, pp. 32-33. This article indicated that the price of the plow was set below manufacturing cost at times and profit was realized only when the cost of production was reduced.

The price series for the double-wheel double-blade plow is derived from the data above, as follows:

	Price (Current Yuan/ Unit)	Comment
1952.....	90.00	The 1953 unit price.
1957.....	61.50	The 1956 unit price.
1965.....	44.00	Interpolated between the 1956 and 1974 unit prices.
1972.....	27.30	The 1974 unit price.

Sowing Machinery

	Year	Price (Current Yuan/ Unit)
Seeders		
5-row.....	1973	492.40
5-row.....	1973	526.00
10-row.....	1973	726.00
24-row.....	1973	1,000.00

Harvesting Machinery

There are not enough prices on comparable items to construct a time series. The data suggest a downward trend in the prices of harvesting machinery.

	Year	Price (Yuan)
Rocker arm harvester.....	1954	850.00 ¹
Rocker arm harvester.....	1955	750.00 ¹
Rocker arm harvester.....	1956	460.00 ¹
Combine harvester.....	1956	41,740.00 ¹
Combine harvester.....	1957	20,000.00 ¹
Thresher made in the Lin-hsien machine plant.	1974	600.00
Kung-nung brand, 28-700 thresher.....	1974	1,500.00

One source stated that there was a 20% price reduction on power-operated threshers in 1966.²

¹ CHKY, No. 21, 1957, pp. 32-33.

² FBIS, 1 Nov 1966, p. ddd2.

Irrigation and Water-Lifting Machinery

	Year	Yuan/HP
Motor and pump set (2.1 HP).....	1958	211.83 ¹

¹ 600 Million Build Industry, op. cit., p. 60.

Tractors*Fifteen-Horsepower Units and Actual Units*

There are wide differences in price between models of tractors. Although listed below, the prices of hand-guided tractors (less than 15 HP nominal) were not used in deriving the price series for tractors. The conversion to drawbar horsepower from nominal horsepower is assumed to be 0.64 to 1.0 unless otherwise known.¹ For a complete listing of tractor models see *JPRS*, No. 63,091, 30 Sep 1974.

Hand-Guided Tractors

	Drawbar HP	Year	Price (Yuan)	Yuan/15 HP
5-HP tractor.....	3.2	1956	9,941.80 ²	46,602
2-HP hand tractor.....	1.3	1973	2,000.00	23,077
5-HP hand tractor.....	3.2	1973	4,000.00	18,750
Iron Ox 7-HP tractor.....	4.5	1973	10,000.00	33,333 ³

Footnotes at end of table.

Large Tractors

	Rawbar HP	Year	Price (Yuan)	Yuan/15 HP
Standard tractor.....	15.0	1957	....	10,371 ¹
54-HP tractor.....	36.0	1959	21,000 ⁵	8,750
Standard tractor.....	15.0	1960	....	10,000 ⁶
Standard tractor.....	15.0	1961	....	10,800 ⁷
Average Loyang tractor.....	36.0	1965	20,833	8,681
Iron Ox, 55-HP.....	35.2	1972	25,000	10,653
Tung-fang-hung 75-HP.....	48.0	1972	40,000	12,500
Tung-fang-hung 75-HP.....	48.0	1973	30,000 ⁸	9,375
Tung-fang-hung 28-HP.....	18.0	1973	18,000	15,000
Feng-shou 35-HP.....	24.0	1973	18,000	11,250
Iron Ox, 55-HP.....	35.2	1974	13,000	5,540

¹ *CHCY*, No. 8, 1958, p. 41. Nine foreign-made tractors are described.

² *ECMM*, No. 67, 28 Jan 1957, p. 18.

³ This may actually be an 11-HP hand-guided tractor (see note No. 8, below).

⁴ *FBIS*, 6 Mar 1957, p. bbb4. The article states that 2,178 million yuan is equal to the cost of 210,000 standard 15-HP tractors.

⁵ Costs and price were given as identical there was no factory markup on tractors.

⁶ *TKP*, 5 Oct 1960, Peking, p. 3.

⁷ *TKP*, 30 Apr 1961, Peking.

⁸ This source reported the price to be that of a Tung-fang-hung 54 tractor from the Loyang Tractor Plant in 1973. Because the Loyang plant was not making the Tung-fang-hung 54 at that time, the price has been assigned to the Tung-fang-hung 75, which was in current production in 1972.

The price series for tractors is derived from the data above, as follows:

	Price (Current Yuan/ Standard 15-HP Unit)	Comment
1957.....	10,371	
1965.....	8,681	
1972.....	10,720	The mean of the unit prices for the six large tractors in 1972-74.

Railroad Rolling Stock and Equipment

Steam Locomotives

Two types of steam locomotives are priced. The MK-1 (a copy of the Japanese Mikado locomotive), with 1,500 HP, was produced from 1952 through 1957. The Peace model, with 2,780 HP,¹ appeared in prototype form in 1956 and was the production mainstay for steam locomotives during the 1960s.

	Year	Yuan/Unit
MK-1.....	1952	200,000 ²
MK-1.....	1957	220,000 ³

¹ *People's China*, 1 Nov 1957, p. 34.

² The ex-factory price of this locomotive, as reported.

³ *Jen-min t'ieh tao*, 12 Oct 1957, Peking, p. 1. This price then implies a markup of 29.7% over the average cost of 169,686 yuan given in *CHKY*, No. 6, 1958, p. 9, and an 47.8% markup over the cost of the low-cost producer in the same article. These markups were applied to the freight car costs in the next section.

No price reference for a Chinese Peace locomotive has been found. The 1957 price has been estimated by analogy with Soviet locomotive prices for models similar to the Chinese units. The 1965 price was estimated by deflating the 1957 price by an index of boiler prices. Prices of Soviet steam locomotives are as follows:

Model	Description	Price (1955 Rubles)
L.....	Steam locomotive, 102 tons, 2-10-0 wheel arrangement.	465,000 ¹
LV.....	Steam locomotive, 122 tons, 2-10-2 wheel arrangement.	600,000 ¹

¹ USSR, Ministerstvo Finansov, *Spravochnik tsen na stroitelnyye materialy i oborudovaniye* (Handbook of Prices for Construction Materials and Equipment), Moscow, 1956, Part II, pp. 877-878.

The ratio of the price of a Chinese Peace locomotive to the price of the Chinese MK-1 locomotive is estimated to have been the same as the ratio of the Soviet price of the LV locomotive and the L locomotive. The price of a Chinese Peace locomotive in 1957 yuan is calculated as 1.29 times the 1957 unit price of the MK-1.

Two price series for steam locomotives are derived from the data above, as follows:

MK-1 Locomotives

	Price (Current Yuan/Unit)	Comment
1952.....	200,000	....
1957.....	220,000	....

Peace Locomotive

	Price (Current Yuan/Unit)	Comment
1957.....	283,800	The unit price of the MK-1 in 1957 yuan times 1.20.
1965.....	244,352	The 1957 unit price deflated by an index of the unit price of boilers in 1957 and 1965. (1957 = 100.0, 1965 = 86.1).

Diesel Locomotives

No price reference for a Chinese diesel locomotive has been found. The 1957 price has been estimated by analogy with Soviet locomotive prices for models similar to the Chinese units. The 1965 and 1972 prices have been estimated by deflating the 1957 price by an index derived from the prices of diesel engines and electric motors. Prices of Soviet locomotives are as follows:

Model	Description	Price (1955 Rubles)
L.....	Steam locomotive, 102 tons, 2-10-0 wheel arrangement.	465,000 ¹
TE-3.....	Diesel locomotive, 2,000 HP.....	1,600,000 ²

¹ USSR, Ministerstvo Finansov, *op. cit.*, pp. 877-878.

² Belenky, M. N., *Teplovoznaya tyagi i yeye effektivnost* (Diesel Traction and its Effectiveness), Moscow, 1956, p. 65.

The ratio of the price of a Chinese 2,000-HP diesel locomotive to the price of the Chinese MK-1 steam locomotive is estimated to have been the same as the ratio of the Soviet price of the TE-3 diesel locomotive and the L-type steam locomotive. The price of a Chinese diesel locomotive in 1957 yuan is calculated as 3.44 times the 1957 unit price of the MK-1.

The prices of diesel locomotives in 1965 and 1972 are estimated by deflating the 1957 price by an index for the price of major components. The price index (1957 = 100) is derived as follows:

	1965	1972
Diesel engines.....	94.7	97.3
Electric motors.....	79.0	55.3
Average of above.....	86.8	76.3

The price series for diesel locomotives is derived from the data above, as follows:

	Price (Current Yuan/ 2,000 HP)	Comment
1957.....	756,800	The price of the MK-1 in 1957 yuan times 3.44.
1965.....	6,6900	The 1957 price deflated by the price index for major components.
1972.....	577,440	The 1957 price deflated by the price index for major components.

Freight Cars

	Year	Yuan/Unit
U-50 gondola car.....	1957	19,389 ¹

¹ CHKY, No. 6, 1958, p. 9. Production costs for two plants manufacturing the U-50 gondola car are given as 16,121 yuan and 13,319 yuan per car. The average cost per freight car of 14,720 yuan was marked up by 29.7% to yield an estimate of 19,092 yuan for the ex-factory price. A second estimate was made by marking up the low-cost producer's cost by 47.8% for a price of 19,685 yuan. The mean of these two estimates (19,389 yuan) was used as the 1957 unit price. The markups used were derived from the cost and price data for steam locomotives.

The price series for freight cars is derived from the data above, as follows:

	Price (Current Yuan/Unit)	Comment
1952.....	21,361	The 1957 unit price inflated by the Shanghai Wholesale Price Index.
1957.....	19,389	

Merchant Vessels*Self-Powered Boats*

The Min-chu No. 11, a passenger steamship, is priced below by both deadweight tonnage and light-ship displacement (empty weight).

	Weight (Tons)	Year	Yuan/ Ton
Passenger steamship (Min-chu No. 11):			
Deadweight tonnage.....	1,010 ¹	1956	4,946 ²
Light-ship displacement.....	1,650 ¹	1956	3,028 ²

¹ JPRS, No. 488-D, *Design of the Coastal Small-Harbor Passenger-Cargo Ships, Min-chu No. 10 and Min-chu No. 11*, 9 Jan 1959, pp. 6-8.

² ECMM, No. 67, 28 Jan 1957, p. 18 states: "... with 1,988,360,000 yuan we can build . . . 308 passenger steamships such as the Min-chu No. 11 launched in 1956."

Two price series for shipbuilding (in current yuan per deadweight ton and per light-ship displacement) are derived from the data above, as follows:

	Current Yuan/DWT	Current Yuan/LSD	Comment
1952.....	5,449	3,336	The 1957 unit prices inflated by the Shanghai Wholesale Price Index.
1957.....	4,946	3,028	

Motor Vehicles and Parts*Motor Vehicles*

The standard item for the price series of motor vehicles is the 4-ton Liberation (Chieh-fang) brand of truck. Prices of other motor vehicles are also noted. The variation in the 1971 prices may be explained in part by the priority status of the purchaser. For example, trucks purchased for agricultural work appear to cost less than trucks for other uses. Source No. 1 gave the price for 1960 and 1971 for the same end user, indicating a price reduction over the period. For detailed information on specific truck types, see JPRS, No. 60,262, 12 Oct 1973.

	Year	Yuan/Unit
Liberation truck, 4 ton.....	1960	18,000 ¹
Liberation truck, 4 ton.....	1964	17,000
Liberation truck, 4 ton.....	1971	12,000 ¹
Liberation truck, 4 ton.....	1971	15,000
Liberation truck, 4 ton.....	1971	10,000 ²
Kuang-chou truck, 3 ton.....	1971	20,000
Peiching jeep (possibly a small van or bus).....	1972	35,000
Liberation truck, 4 ton.....	1972	15,566 ³
Liberation truck, 4 ton.....	1972	14,500 ⁴
Liberation truck, 4 ton.....	1973	16,000

¹ Made in Ch'ang-ch'un. Purchaser was an electric powerplant.

² Purchaser was a commune.

³ Unit price for a lot of five trucks. Transport charges may be included.

⁴ Unit price for a lot of 100 trucks.

The price series for motor vehicles is derived from the data above, as follows:

	Price (Current Yuan/4-Ton Truck)	Comment
1957.....	18,000	The 1960 price.
1965.....	17,000	The 1964 price.
1972.....	13,844	The mean of the six 1971-73 prices.

Telecommunication Equipment and Parts

Radio Receivers

Vacuum Tube Radios

A five-tube, single-band, radio is assumed to be the most common tube type of radio and is taken as the standard for the price series. The following are retail prices, not ex-factory prices.

	Year	Yuan/Set
7-tube Shanghai brand.....	1957	185.00
Model 102 5-tube 2-band.....	1961	99.00
Model 101 5-tube 2-band.....	1961	80.00
General 5-tube set.....	1961	50.00 (or less)
3-tube set.....	1972	18.60
5-tube 2-band set.....	1972	180.00
8-tube set.....	1973	80.00 120.00 ¹
4-tube set.....	1974	45.00
2-band Shanghai brand.....	1974	120.00 ²

¹ Price varied with the brand.

² A pre-March 1973 price of 144 yuan was also given.

The ratio 45:120, or 0.375, derived from the 1974 prices for the four-tube set and the two-band Shanghai brand set, was used to adjust any seven- or eight-tube set price to a five-tube price. Thus the 1957 price for a five-tube radio (69.38 yuan) was derived from the 185 yuan price for the seven-tube radio. To adjust from a two-band price to single-band price, the ratio 50:85, or 0.588, determined from the 1961 prices, was used.

The price series for tube-type radios is derived from the data above, as follows:

	Price (Current Yuan/Set)	Comment
1952.....	75.00	The 1957 unit price inflated by the consumer goods price deflator of 1952 = 100, 1957 = 92.5.
1957.....	69.38	0.375 times the 1957 unit price of the seven-tube radio set.
1965.....	50.00	The 1961 unit price.
1972.....	57.90	The mean of the adjusted 1972-74 unit prices for the five sets.

Transistor Radios

The following are retail prices, not ex-factory prices.

	Year	Yuan/Set
Mei-to brand, small.....	1964	100.00
Fei-le brand, large (nine transistors).....	1964	100.00
Fei-le brand, small (eight transistors).....	1964	60.00
Price range in Hei-lung-kiang.....	1972	25.00 140.00
Price range in Shanghai city.....	1972	68 80.00
Price range in the Shanghai area.....	1972	70.00 110.00
Average transistor price.....	1972	84.00
Transistor, national average		
Prior to 1 Oct.....	1972	92.71 ¹
After 1 Oct.....	1972	77.57 ¹
Model 802 (eight-transistor, two-band)		
Prior to Mar.....	1973	130.00
After Mar.....	1973	110.00
Model 703 (seven-transistor, three-band)		
Prior to Mar.....	1973	110.00
After Mar.....	1973	92.00
Model 602 (six-transistor, two-band)		
Prior to Mar.....	1973	76.00
After Mar.....	1973	55.00
Model 502 (five-transistor, two-band)		
Prior to Mar.....	1973	40.00
After Mar.....	1973	35.00
Model 401 (four-transistor, one-band)		
Prior to Mar.....	1973	33.00
After Mar.....	1973	19.00

¹ Given as the national average price by this source.

The price series for transistor radios is derived from the data above, as follows:

	Price (Current Yuan/Set)	Comment
1957.....	106.70	The mean of the three 1964 unit prices.
1965.....	106.70	The mean of the three 1964 unit prices.
1972.....	92.71	

Cultural and Consumer Products*Bicycles*

The following are retail prices, not ex-factory prices.

	Year	Yuan/Unit
The mean of six unit prices.....	1952	147.16 ¹
18" Red Kapok brand.....	1964	150.70
General price range.....	1965	150.00-200.00
The average price in the area of		
Hei-lung-kiang.....	1972	137.00-170.00
Honan.....	1972	150.00
Peking.....	1972	150.00-180.00
Shanghai city.....	1972	150.00
Shanghai area.....	1972	160.00
Red Cotton brand.....	1972	134.00
Yung-chiu brand.....	1972	175.00
Phoenix brand.....	1972	176.90
Flying Pigeon brand.....	1972	180.00
General price in Peking area.....	1972	137.00
General price in Peking area.....	1974	153.00

¹ KYCT, No. 1, 1952 and Kang Chao, *The Rate and Pattern of Industrial Growth in Communist China*, The University of Michigan Press, Ann Arbor, 1965, p. 157.

Considering the above prices it appears that the price of bicycles has been reasonably constant for a number of years. Prices vary between brands from about 135.00 yuan to about 200.00 yuan.

The price series for bicycles is derived from the data above, as follows:

	Price (Current Yuan/Unit)	Comment
1952.....	147.16	
1957.....	160.00	Assuming that the price of bicycles has been constant from 1957 through 1974, the mean of the 13 unit prices is used for all those years.
1965.....	160.00	
1972.....	160.00	

Wristwatches

The following are retail prices, not ex-factory prices.

	Year	Yuan/Unit
The mean of 27 unit prices.....	1957	112.00 ¹
Average watch.....	1974	120.00 ²

¹ An average from many reports.

² Prices vary from 85.00 yuan for the cheapest 17-jewel watch to more than 200.00 yuan for other models. The average price of 120.00 yuan is fairly consistent from many reports over a number of years; thus the 1965 and 1972 unit prices have been assumed to be 120.00 yuan.

The price series for wristwatches is derived from the data above, as follows:

	Price (Current Yuan/Unit)	Comment
1957.....	112.00	
1965.....	120.00	Assumed to have been constant for 1965-74.
1972.....	120.00	Assumed to have been constant for 1965-74.